



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN  
RISET, DAN TEKNOLOGI  
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**REKOMENDASI PERSETUJUAN ETIK**

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Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No.Protokol	15120105001	No. Sponsor Protokol	
Peneliti Utama	<b>Dr. Ida Leida Maria, SKM., M.KM., MSc.PH</b>	Sponsor	<b>Pribadi</b>
Judul Peneliti	<b>Determining Covid-19 Disaster Preparedness in Students in Makassar City</b>		
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Tempat Penelitian	<b>Makassar</b>		
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Ketua Komisi Etik Penelitian	Nama : Prof.dr.Veni Hadju,M.Sc,Ph.D	Tanda tangan 	Tanggal <b>21 Februari 2020</b> 
Sekretaris komisi Etik Penelitian	Nama : Nur Arifah,SKM,MA	Tanda tangan 	Tanggal <b>21 Februari 2020</b> 

Kewajiban Peneliti Utama :

1. Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
2. Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
3. Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
4. Menyerahkan laporan akhir setelah Penelitian berakhir
5. Melaporakn penyimpangan dari protocol yang disetujui (protocol deviation/violation)
6. Mematuhi semua peraturan yang ditentukan



## Determining Covid-19 Disaster Preparedness in Students in Makassar City

### *Determinan Kesiapsiagaan Pandemi Covid-19 pada Mahasiswa Se-Kota Makassar*

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#### ABSTRACT

Covid-19 is a disease that has become a pandemic that is very troubling at this time, including in Indonesia, which until July 16, there were 81,668 with a total of 3,873 deaths. This study aims to determine the determinants that affect the preparedness of the Covid-19 Pandemic among students in Makassar City. The study was conducted in an observational manner with a cross sectional study approach. Sampling in this study was conducted using non probability sampling technique, namely consecutive sampling. This research was conducted at 8 universities in Makassar City from April to July 2020. The type of data collection used accidental sampling. The results of data collection in this study were processed using the Stata 16 application which was analyzed univariately and bivariately. The results of data processing are presented in the form of tables and are equipped with narration. The results in this study indicate that there is a relationship between Covid-19 preparedness and knowledge ( $p=0.049$ ), experience ( $p=0.013$ ), attitude of respondents ( $p=0.018$ ). The conclusion of this study is that knowledge, experience and attitude are determinants of Covid-19 preparedness. The author's suggestion is that the government can improve education and efforts to implement prevention by the community.

#### ABSTRAK

Covid-19 merupakan penyakit yang menjadi pandemi yang sangat meresahkan saat ini termasuk di Indonesia yang sampai dengan tanggal 16 Juli sebanyak 81.668 dengan jumlah kasus kematian sebanyak 3.873. Penelitian ini bertujuan untuk mengetahui faktor determinan yang memengaruhi kesiapsiagaan pandemi Covid-19 pada Mahasiswa se-Kota Makassar. Penelitian dilakukan secara observasional dengan pendekatan cross sectional study. Pengambilan sampel dalam penelitian ini dilakukan dengan teknik non probability sampling, yaitu consecutive sampling. Penelitian ini dilakukan di 8 Universitas yang ada di Kota Makassar pada bulan April-Juli 2020. Jenis pengumpulan data menggunakan accidental sampling. Hasil pengumpulan data pada penelitian ini diolah menggunakan aplikasi Stata 16 yang dianalisis secara univariat dan bivariat. Hasil pengolahan data disajikan dalam bentuk tabel, dan grafik dan dilengkapi dengan narasi. Hasil dalam penelitian ini menunjukkan ada hubungan antara kesiapsiagaan Covid-19 dengan pengetahuan ( $p=0,049$ ), pengalaman ( $p=0,013$ ), sikap responden ( $p=0,018$ ). Kesimpulan penelitian ini bahwa pengetahuan, pengalaman dan sikap merupakan determinan kesiapsiagaan Covid-19. Saran penulis yaitu pemerintah dapat meningkatkan edukasi serta upaya implementasi pencegahan Covid-19 oleh masyarakat.

## INTRODUCTION

Disaster means an event or series of events caused by nature, humans and or both, resulting in victims of human suffering, loss of property, damage to the environment, damage to public infrastructure and facilities as well as disturbing the order of life and community livelihoods Data from the National Disaster Management Agency Indonesia shows the number of disasters since the last 10 years, namely 2,342 events, an increase of 35 percent from 2018. The impact caused by a series of disaster events during 2019 was 522 people died, 3.05 million people were displaced, 69,287 houses damaged, and 2311 units of public facilities damaged.<sup>1</sup>

Indonesia is a developing country which is also the fourth most populous country in the world which has a high enough risk and is expected to go through quite a difficult time and a long time to face the threat of Covid-19 compared to other countries.<sup>2</sup> WHO declared Covid-19 a global pandemic on March 11, 2020 because this virus has spread to various countries in the world. It was reported that on May 16, 2020, there were 4 million cases of Covid-19 in the world, with the highest number of cases in America followed by Europe, with more than 300 thousand cases of death.<sup>3</sup> Indonesia confirmed the first Covid-19 case on March 2 2020 with the discovery of two confirmed cases. Cases in Indonesia continued to increase up to July 16 as many as 81,668 with a total of 3,873 deaths. Several Provinces in Indonesia were reported on 16 July 2020 with the highest number of cases, namely East Java

17,574 cases, DKI Jakarta 15,636 cases and South Sulawesi 7,630 cases.<sup>4</sup>

Preparedness is a series of activities carried out to anticipate disasters through organizing and through effective and efficient measures so as to reduce the bad impact of the disaster, both physical damage and casualties. There are several things in disaster preparedness including personal knowledge, community related to disaster mitigation and its provisions, disaster education in the form of socialization, training, as well as through formal education, disaster response, disaster early warning systems. Students are the nation's generation who have excellent potential in conducting studies in accordance with their pre-disaster fields such as disaster risk reduction, prevention and preparedness, spatial planning, rehabilitation and reconstruction processes. The need for both knowledge and skill preparation for students to face disaster conditions.

According to the Indonesian Institute of Sciences and the United Nations Educational, Scientific and Cultural Organization (UNESCO), there are 5 factors that influence disaster preparedness, namely: knowledge and attitudes towards disaster risk, policies and guidelines, plans for disaster emergencies, disaster warning systems, the ability to mobilize resources.<sup>5</sup> Research conducted by Rahayu to students of the Nursing Study Program, Muhammadiyah University of Yogyakarta, the research shows that the level of students' knowledge about earthquakes is in the high category, but the level of preparedness in facing earthquakes is still low.<sup>6</sup> Another study on students of the

Geography Education Study Program at Kanjuruhan University Malang in 2017 found that the respondent's level of knowledge and the level of disaster preparedness was still lacking.<sup>7</sup>

The preliminary study conducted by FKM students who participated in the disaster management course for students at four universities around Unhas in 2019 showed that the students' low knowledge and disaster preparedness were also carried out, several universities in Makassar to find out the determination of this preparedness. Based on what has been explained regarding the increasing number of cases and the lack of preparedness in students, the aim of this study is to determine the determinants that affect the preparedness of students against Covid-19 in Makassar City.

## **MATERIAL AND METHOD**

The study was conducted observational with a cross sectional study approach to determine the relationship between dependent and independent variables. This research was conducted at 8 selected universities in Makassar City from April to July 2020. The population in this study were all students studying at universities in the Makassar City area. Sampling in this study was carried out using non-probability sampling techniques, namely consecutive sampling, in which every student encountered and met the inclusion criteria of the study were 240 samples. This type of data collection uses accidental sampling which is collected by conducting an online survey. The data that had been collected were processed

using Stata 16. The data were analyzed by univariate and bivariate using the chi-square test. The results of data analysis are presented in tabular form accompanied by narration.

## **RESULTS**

Table 1 shows that the characteristics of disaster preparedness respondents were more in the 17-21 year age group, namely 227 (94.6%) and the least was in the 22-26 year age group, namely 13 (5.4%). Most respondents were female, namely 188 (78.3%) and male as much as 52 (21.7%). Most respondents came from the Bugis ethnic group, namely 117 (48.8%) and the least number from the Mandar tribe, namely 3 (1.3%). Whereas the most respondents lived during lecture at their parents' house, namely 104 (43.3%) and the fewest who lived in student dormitories, namely 4 (1.7%). At the time of the pandemic, most respondents chose to return hometown, namely 144 (60%). Respondents came from 8 universities in Makassar City, respectively 30 (12.5%) (Table 1).

Table 2 shows that the most respondents who are not ready to carry out preparedness with a lack of knowledge category are 139 people and the least respondents who are ready to carry out preparedness with sufficient knowledge are 5 people. The results of the bivariate analysis showed  $p\text{-value}=0.049$ , meaning that there was a relationship between respondents' knowledge and preparedness for Covid-19. Respondents who did not want to have experience being a Covid-19 volunteer had the most adequate preparedness, namely 23.8%. Respondents who wanted to have experience of

being a Covid 19 volunteer were more likely to carry out adequate preparedness, namely 38.1%. The results of the analysis show  $p=0.013$ , which means that there is a relationship between respondents' experiences and preparedness for Covid-19. Respondents who had negative attitudes mostly did adequate preparedness, namely 24.5%. Meanwhile, respondents who had positive attitudes mostly did adequate preparedness, namely 38.1%. The results of the analysis showed  $p=0.018$ , meaning that there was a relationship between student attitudes and Covid-19 preparedness (Table 2).

**Table 1. Characteristic of Respondents**

Characteristic	n = 240	%
<b>Age (years)</b>		
17-21	227	94.6
22-26	13	5.4
<b>Gender</b>		
Male	52	21.7
Women	188	78.3
<b>Tribe</b>		
Bugis	117	48.8
Makassar	78	32.5
Mandar	3	1.3
Toraja	13	5.4
Others	29	12.1
<b>Where to Stay During College</b>		
Parents' House	104	43.3
Join Family	35	14.6
Cost or Contract	97	40.4
Student Dormitory	4	1.7
<b>Going Hometown During the Pandemic</b>		
Yes	144	60.0
Not	81	33.8
There is No Hometown	15	6.3
<b>University</b>		
Universitas Hasanuddin	30	12.5
Universitas Negeri Makassar	30	12.5
UIN Alauddin	30	12.5
Universitas Muhammadiyah Indonesia	30	12.5
Universitas Bosowa	30	12.5
Unismuh Makassar	30	12.5
Universitas Fajar	30	12.5
Universitas Mega Rezky	30	12.5

Source: Primary Data, 2020

## DISCUSSION

Knowledge is influenced by factors of education, information sources, socio-culture, economy, environment, experience, and age.<sup>8</sup> The results of the analysis show that there is a relationship between respondents' knowledge and preparedness for Covid-19. Knowledge is information obtained about objects that are received through sensory receptors and processed in the central nervous system. This study is in line with what Natalia did, showing that there was a significant relationship between knowledge and preparedness ( $p=0.006$ ) in a positive direction ( $r=269$ ).<sup>9</sup> The higher the student's knowledge the higher the preparedness.

Other research that is in line with the results of this study is research conducted by Clements J. M which shows that the people of the United States have good knowledge and behavior and Zhong BL who researches Chinese society as the initial place for the discovery of this corona virus also has good and positive knowledge and behavior.<sup>10,11</sup> This is also related to the experience of the Chinese people in dealing with the SARS outbreak in the 2000s. Information related to Covid-19 was obtained by students from social media, the internet, television, the Ministry of Health, WHO and friend information.<sup>12</sup>

The results of the analysis show that there is a relationship between the respondents' experiences of Covid-19 preparedness. Individuals' readiness for disasters is also demonstrated by the presence of knowledge, skills and

abilities gained through learning from experiences that were actually applied during an emergency. Most of the disaster education will only be carried out after a disaster has occurred and will gradually decrease when the disaster has not occurred for a long time. This allows the preparedness behavior in disaster-prone communities to decrease. It is better if training and education are carried out regularly so that the preparedness behavior of the community, especially students, is always at an optimal level.<sup>6</sup>

The results of the analysis indicate that there is a relationship between the respondent's attitude and Covid-19 preparedness. This is in line with research conducted in several countries showing that many positive attitudes are shown by students, including in India, having a good attitude in preventing Covid-19 in medical students.<sup>13</sup> The attitudes of students in Pakistan are obtained, namely having a good attitude, and research among students in China obtainable a positive attitude in preventing Covid-19.<sup>14,15</sup>

According to Notoatmodjo, attitude is a readiness or willingness to act and not an implementation of a particular motive. In other words, the function of attitude is not yet an action (open reaction) or activity, but rather a predisposition to behavior (action) or a closed reaction. Attitude determines a person's behavior. It is hoped that a positive attitude will become a strong motivation in the effort to document nursing care. Attitude is a reaction or response that is still permanent from someone to a stimulus or object.<sup>16</sup>

Efforts that can be made to deal with Covid 19 are to continue to carry out physical distancing, diligently wash hands, use masks when leaving the house, and carry out their obligations as students to study at home online (online).<sup>17</sup> Forming new healthy habits during a pandemic Covid-19, need the support of family and loved ones. All parties need to work together in increasing vigilance and prepared-ness for Covid 19.<sup>9</sup>

**Table 2. Analysis of Respondents' Knowledge of Covid-19 Preparedness**

Variable	Preparedness				Total		p
	Ready		Not Ready		n	%	
	n	%	n	%			
<b>Knowledge</b>							
Less	72	34.1	139	65.9	211	100	0.049
Enough	5	17.2	24	82.8	29	100	
<b>Experience</b>							
Yes	53	38.1	86	61.9	139	100	0.013
Not	24	23.8	77	76.2	101	100	
<b>Attitude</b>							
Positive	51	38.1	83	61.9	134	100	0.018
Negative	26	24.5	80	75.5	106	100	

Source: Primary Data, 2020

## CONCLUSION AND RECOMMENDATION

The conclusion of this study is that there is a relationship between preparedness for Covid-19 and knowledge ( $p=0.049$ ), experience ( $p=0.013$ ), and the attitude of the respondents ( $p=0.018$ ). The author suggests that the community can implement their knowledge in implementing disaster preparedness. In addition, the government can further improve education for the community in disaster preparedness.

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Preparedness is a series of activities carried out to anticipate disasters through organizing and through effective and efficient measures so as to reduce the bad impact of the disaster, both physical damage and casualties. There are several things in disaster preparedness including personal knowledge, community related to disaster mitigation and its provisions, disaster education in the form of socialization, training, as well as through formal education, disaster response, disaster early warning systems. Students are the nation's generation who have excellent potential in conducting studies in accordance with their pre-disaster fields such as disaster risk reduction, prevention and preparedness, spatial planning, rehabilitation and reconstruction processes. The need for both knowledge and skill preparation for students to face disaster conditions.

According to the Indonesian Institute of Sciences and the United Nations Educational, Scientific and Cultural Organization (UNESCO), there are 5 factors that influence disaster preparedness, namely: knowledge and attitudes towards disaster risk, policies and guidelines, plans for disaster emergencies, disaster warning systems, the ability to mobilize resources.<sup>5</sup> Research conducted by Rahayu to students of the Nursing Study Program, Muhammadiyah University of Yogyakarta, the research shows that the level of students' knowledge about earthquakes is in the high category, but the level of preparedness in facing earthquakes is still low.<sup>6</sup> Another study on students of the

Geography Education Study Program at Kanjuruhan University Malang in 2017 found that the respondent's level of knowledge and the level of disaster preparedness was still lacking.<sup>7</sup>

The preliminary study conducted by FKM students who participated in the disaster management course for students at four universities around Unhas in 2019 showed that the students' low knowledge and disaster preparedness were also carried out, several universities in Makassar to find out the determination of this preparedness. Based on what has been explained regarding the increasing number of cases and the lack of preparedness in students, the aim of this study is to determine the determinants that affect the preparedness of students against Covid-19 in Makassar City.

## MATERIAL AND METHOD

The study was conducted observational with a cross sectional study approach to determine the relationship between dependent and independent variables. This research was conducted at 8 selected universities in Makassar City from April to July 2020. The population in this study were all students studying at universities in the Makassar City area. Sampling in this study was carried out using non-probability sampling techniques, namely consecutive sampling, in which every student encountered and met the inclusion criteria of the study were 240 samples. This type of data collection uses accidental sampling which is collected by conducting an online survey. The data that had been collected were processed

using Stata 16. The data were analyzed by univariate and bivariate using the chi-square test. The results of data analysis are presented in tabular form accompanied by narration.

## RESULTS

Table 1 shows that the characteristics of disaster preparedness respondents were more in the 17-21 year age group, namely 227 (94.6%) and the least was in the 22-26 year age group, namely 13 (5.4%). Most respondents were female, namely 188 (78.3%) and male as much as 52 (21.7%). Most respondents came from the Bugis ethnic group, namely 117 (48.8%) and the least number from the Mandar tribe, namely 3 (1.3%). Whereas the most respondents lived during lecture at their parents' house, namely 104 (43.3%) and the fewest who lived in student dormitories, namely 4 (1.7%). At the time of the pandemic, most respondents chose to return hometown, namely 144 (60%). Respondents came from 8 universities in Makassar City, respectively 30 (12.5%) (Table 1).

Table 2 shows that the most respondents who are not ready to carry out preparedness with a lack of knowledge category are 139 people and the least respondents who are ready to carry out preparedness with sufficient knowledge are 5 people. The results of the bivariate analysis showed p-value=0.049, meaning that there was a relationship between respondents' knowledge and preparedness for Covid-19. Respondents who did not want to have experience being a Covid-19 volunteer had the most adequate preparedness, namely 23.8%. Respondents who wanted to have experience of

being a Covid 19 volunteer were more likely to carry out adequate preparedness, namely 38.1%. The results of the analysis show  $p=0.013$ , which means that there is a relationship between respondents' experiences and preparedness for Covid-19. Respondents who had negative attitudes mostly did adequate preparedness, namely 24.5%. Meanwhile, respondents who had positive attitudes mostly did adequate preparedness, namely 38.1%. The results of the analysis showed  $p=0.018$ , meaning that there was a relationship between student attitudes and Covid-19 preparedness (Table 2).

**Table 1. Characteristic of Respondents**

Characteristic	n = 240	%
<b>Age (years)</b>		
17-21	227	94.6
22-26	13	5.4
<b>Gender</b>		
Male	52	21.7
Women	188	78.3
<b>Tribe</b>		
Bugis	117	48.8
Makassar	78	32.5
Mandar	3	1.3
Toraja	13	5.4
Others	29	12.1
<b>Where to Stay During College</b>		
Parents' House	104	43.3
Join Family	35	14.6
Cost or Contract	97	40.4
Student Dormitory	4	1.7
<b>Going Hometown During the Pandemic</b>		
Yes	144	60.0
Not	81	33.8
There is No Hometown	15	6.3
<b>University</b>		
Universitas Hasanuddin	30	12.5
Universitas Negeri Makassar	30	12.5
UIN Alauddin	30	12.5
Universitas Muhammadiyah Indonesia	30	12.5
Universitas Bosowa	30	12.5
Unismuh Makassar	30	12.5
Universitas Fajar	30	12.5
Universitas Mega Rezky	30	12.5

Source: Primary Data, 2020

## DISCUSSION

Knowledge is influenced by factors of education, information sources, socio-culture, economy, environment, experience, and age.<sup>8</sup> The results of the analysis show that there is a relationship between respondents' knowledge and preparedness for Covid-19. Knowledge is information obtained about objects that are received through sensory receptors and processed in the central nervous system. This study is in line with what Natalia did, showing that there was a significant relationship between knowledge and preparedness ( $p=0.006$ ) in a positive direction ( $r=269$ ).<sup>9</sup> The higher the student's knowledge the higher the preparedness.

Other research that is in line with the results of this study is research conducted by Clements J. M which shows that the people of the United States have good knowledge and behavior and Zhong BL who researches Chinese society as the initial place for the discovery of this corona virus also has good and positive knowledge and behavior.<sup>10,11</sup> This is also related to the experience of the Chinese people in dealing with the SARS outbreak in the 2000s. Information related to Covid-19 was obtained by students from social media, the internet, television, the Ministry of Health, WHO and friend information.<sup>12</sup>

The results of the analysis show that there is a relationship between the respondents' experiences of Covid-19 preparedness. Individuals' readiness for disasters is also demonstrated by the presence of knowledge, skills and

abilities gained through learning from experiences that were actually applied during an emergency. Most of the disaster education will only be carried out after a disaster has occurred and will gradually decrease when the disaster has not occurred for a long time. This allows the preparedness behavior in disaster-prone communities to decrease. It is better if training and education are carried out regularly so that the preparedness behavior of the community, especially students, is always at an optimal level.<sup>6</sup>

The results of the analysis indicate that there is a relationship between the respondent's attitude and Covid-19 preparedness. This is in line with research conducted in several countries showing that many positive attitudes are shown by students, including in India, having a good attitude in preventing Covid-19 in medical students.<sup>13</sup> The attitudes of students in Pakistan are obtained, namely having a good attitude, and research among students in China obtainable a positive attitude in preventing Covid-19.<sup>14,15</sup>

According to Notoatmodjo, attitude is a readiness or willingness to act and not an implementation of a particular motive. In other words, the function of attitude is not yet an action (open reaction) or activity, but rather a predisposition to behavior (action) or a closed reaction. Attitude determines a person's behavior. It is hoped that a positive attitude will become a strong motivation in the effort to document nursing care. Attitude is a reaction or response that is still permanent from someone to a stimulus or object.<sup>16</sup>

Efforts that can be made to deal with Covid 19 are to continue to carry out physical distancing, diligently wash hands, use masks when leaving the house, and carry out their obligations as students to study at home online (online).<sup>17</sup> Forming new healthy habits during a pandemic Covid-19, need the support of family and loved ones. All parties need to work together in increasing vigilance and prepared-ness for Covid 19.<sup>9</sup>

**Table 2. Analysis of Respondents' Knowledge of Covid-19 Preparedness**

Variable	Preparedness				Total		p
	Ready		Not Ready		n	%	
	n	%	n	%			
<b>Knowledge</b>							
Less	72	34.1	139	65.9	211	100	0.049
Enough	5	17.2	24	82.8	29	100	
<b>Experience</b>							
Yes	53	38.1	86	61.9	139	100	0.013
Not	24	23.8	77	76.2	101	100	
<b>Attitude</b>							
Positive	51	38.1	83	61.9	134	100	0.018
Negative	26	24.5	80	75.5	106	100	

Source: Primary Data, 2020

## CONCLUSION AND RECOMMENDATION

The conclusion of this study is that there is a relationship between preparedness for Covid-19 and knowledge ( $p=0.049$ ), experience ( $p=0.013$ ), and the attitude of the respondents ( $p=0.018$ ). The author suggests that the community can implement their knowledge in implementing disaster preparedness. In addition, the government can further improve education for the community in disaster preparedness.

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